

**UNITED STATES DEPARTMENT OF COMMERCE****Patent and Trademark Office**

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AS

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/423, 981 02/18/00 MURAMATSU

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023850 IM22/1022
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EXAMINER

SAVAGE, J

ART UNIT	PAPER NUMBER
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1775

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DATE MAILED: 10/22/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No. 09/423,981	Applicant(s) Muramatsu et al.
Examiner Jason Savage	Art Unit 1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on Oct 9, 2001

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle* 1035 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-4 and 6 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-4 and 6 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are objected to by the Examiner.

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) All b) Some* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) Notice of References Cited (PTO-892)

18) Interview Summary (PTO-413) Paper No(s). _____

16) Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) Notice of Informal Patent Application (PTO-152)

17) Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

20) Other: _____

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Claim Objections

1. Claims 1 and 6 are objected to because of the following informalities:

Claim 1 is objected to because the clean copy of the claims still contains the phrase 'particularly suited as sliding material' in line 1 which is indefinite. However, it was noted that the marked up copy had deleted this phrase and that the Amendment had indicated on page 3 that the indefinite language had been intended to be deleted so the failure to delete the phrase in question from the clean copy of the claims was treated as an oversight and should be corrected in the next response from Applicant.

Claim 6 depends from canceled claim 5. For Examination purposes, the claim has been treated as if it depends from claim 1 or 2. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. (US 6,090,497) in view of Kawagoe et al. (US 5,864,745).

Mori teaches a coated member wherein the coating is a wear resistant Al-Si alloy having a content of Si from 26-80 weight % and further containing fine Si particles from 0.01 to 10 μm

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dispersed therein (col. 2, ln. 27-37). The wear resistant coating may also contain additional materials such a 0.05-10%Mg, 0.5-10%Cu, 0.1-20% Sn, and between 0.05-15% of Mn, Fe, and/or Ni (col. 3, ln. 1-8; col. 3, ln. 65 – col. 4, ln. 9). Mori further teaches that the wear resistant coating which is formed by thermally spraying is suitable for compressor parts such as in automobiles (col. 5, ln. 44 – col. 6, ln. 3).

Regarding the limitation that the flame-spraying method used is HVOF, HVOF is a well known method of thermal-spraying. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used any known method of thermal-spraying, including HVOF to have applied the aluminum-alloy coating. Furthermore, the HVOF process does not provide a distinction over other flame-spraying methods since Applicant admits on page 5, lines 28-29 of the Specification that various flame-spraying methods can be employed to form the claimed aluminum-alloy. Finally, HVOF is a process limitation, when there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that same process of making, see *In re Brown*, 173 U.S.P.Q. 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

Mori does not teach the roughening of the substrate surface; however, it is well known in the art to roughen the substrate surface in order to improve the adhesion of the overlying coating. Kawagoe teaches a flame sprayed aluminum silicon alloy (col. 13, ln. 5-7) as well as shot blasting the substrate to roughen the surface before applying the wear resistant coating (col. 15, ln. 59 – col. 6, ln. 31). It would have been obvious to one of ordinary skill in the art at the time

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of the invention to have roughened the surface of the substrate prior to applying the wear resistant coating of Mori in order to have increased the adhesion between the substrate and the coating.

Regarding the limitation that the flame-sprayed aluminum alloy has adhesive strength of film higher than that of a flame-sprayed Ni film, such an adhesive strength would have been inherent. The Patent and Trademark Office can require Applicant to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on Applicants where rejection based on inherency under 35 U.S.C. § 102 or on *prima facie* obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 U.S.P.Q. 431 (CCPA 1977).

Regarding the material ranges in claim 3, although the weight percentages of the additional materials are not within the exact same ranges claimed by Applicant, all of the material ranges taught by Mori overlap the material ranges claimed by Applicant which obviates claim 3.

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5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. (US 6,090,497) in view of Kawagoe et al. (US 5,864,745) as applied to claims 1-4, and in further view of Wilkosz et al. (US 5,655,432).

Mori and Kawagoe teach what is set forth above but it does not teach a layer covering the outer surface of the wear resistant coating. However, it is known in the art to coat wear resistant components with lubricating coatings in order to improve the seizure resistance during dry conditions.

Wilkosz teaches an aluminum-silicon swash-plate compressor which has a coating comprising a PTFE resin and lubricating particles such as carbon and MoS₂ dispersed therein (col. 3, ln. 38-60). This coating reduces the friction of the swash-plate and increases its durability (col. 3, ln. 5-8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the lubricating or friction reducing coatings of Wilkosz on the exterior surface of the coating taught by Mori as modified by Kawagoe in order to have improved the seizure resistance and to increase the durability of the swash-plate compressor, particularly during dry conditions.

Response to Arguments

6. Applicant's arguments filed 10-9-01 have been fully considered but they are not persuasive.

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Applicant argues that Mori does not teach a HVOF method; however as was stated above such a method would have been an obvious method of flame-spraying the aluminum alloy. Applicant also argues that Mori does not teach roughening the substrate by shot blasting; however this deficiency is overcome by the combination with Kawagoe.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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8. Any inquiry to this communication or earlier communications from the Examiner should be directed to Jason Savage, whose telephone number is (703)305-0549. The Examiner can normally be reached Monday to Friday from 6:30 AM to 4:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Deborah Jones, can be reached on (703)308-3822.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)308-2351.



Jason Savage

10-18-01


DEBORAH JONES
SUPERVISORY PATENT EXAMINER